provide reliable, efficient, and secure point-to-point connections for private networks 102. Some prior art approaches require network reconfiguration each time a frame relay circuit fails, and some have complex router configurations to handle load balancing and network failures. This requires substantial effort by individual frame relay network customers to maintain connectivity, and they will often receive little or no help from the frame relay carriers. Instead, well-trained staff are needed at each location, as are expensive routers. By contrast, these requirements are not imposed by the present invention.

As used herein, terms such as "a" and "the" and item designations such as "connection" or "network" are generally inclusive of one or more of the indicated item. In particular, in the claims a reference to an item normally means at least one such item is required.

The invention may be embodied in other specific forms without departing from its essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. Headings are for convenience only. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by patent is:

1. A controller which controls access to multiple independent private networks in a parallel network configuration, the controller comprising:

a site interface connecting the controller to a site;

at least two private network interfaces; and

a packet path selector which selects between private network interfaces according to a specified criterion;

wherein the controller receives a packet through the site interface and sends the packet through the private network interface that was selected by the packet path selector.

2. The controller of claim 1, wherein the controller control access to multiple independent frame relay networks, and each of the at least two private network interfaces comprises a frame relay network interface.

3. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a load-balancing criterion, thereby promoting balanced loads on devices that carry packets after the packets leave the selected private network interfaces.

4. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a reliability criterion, thereby promoting use of devices that will still carry packets after the packets leave the selected private network interfaces, when other devices that could have been selected are not functioning.

5. The controller of claim 1, wherein the packet path selector selects between private network interfaces according to a security criterion, thereby promoting use of multiple private networks to carry different pieces of a given message so that unauthorized interception of packets on fewer than all of the private networks used to carry the message will not provide the total content of the message.

6. The controller of claim 1, wherein the controller sends packets out of sequence over the parallel private networks.

7. The controller of claim 6, wherein the controller places an encrypted sequence number in at least some of the packets which are sent out of sequence.

8. The controller of claim 1, wherein the controller comprises at least three frame relay network interfaces, each of which is selectable by the packet path selector.

9. The controller of claim 1, wherein the controller operates in a system providing at least one point-to-point connection.

10. The controller of claim 1, wherein the controller operates in a system providing connectivity over at least two frame relay networks from at least two carriers, each frame relay network operating on its own clock which is different from the clock of the other frame relay network.

11. The controller of claim 1, wherein each private network interface is an indirect interface tailored to a particular type of frame relay network.

12. The controller of claim 1, wherein each private network interface is a direct interface comprising an Ethernet card.

13. A method for combining connections for access to multiple parallel private networks, the method comprising the steps of:

obtaining a controller, the controller comprising a site interface, at least two private network interfaces, and a packet path selector which selects between private network interfaces according to a specified criterion;

connecting the controller site interface to a site to receive packets from a computer at the site;

connecting a first private network interface of the controller to a first private network;

connecting a second private network interface of the controller to a second private network which is parallel to and independent of the first private network; and

sending a packet to the site interface which then sends the packet through a private network interface selected by the packet path selector.

14. The method of claim 13, wherein the private networks are frame relay networks.

15. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a load-balancing criterion.

16. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a reliability criterion.

17. The method of claim 13, further comprising the step of specifying the criterion for use by the packet path selector, wherein the specified criterion is a security criterion.

18. The method of claim 13, wherein at least one of the steps connecting a private network interface of the controller connects the controller to a User-to-Network Interface in a router of a frame relay network.

19. A method for combining connections for access to multiple independent parallel frame relay networks, the method comprising the steps of:

sending a packet to a site interface of a controller, the controller comprising the site interface which receives packets, at least two network interfaces, and a

packet path selector which selects between network interfaces according to a specified criterion; and

specifying the criterion for use by the packet path selector, wherein the specified criterion is one of: a security criterion, a reliability criterion, a load-balancing criterion.

20. The method of claim 19, wherein the step of sending a packet to the controller site interface is repeated as multiple packets are sent, the step of specifying a criterion specifies a security criterion, and the controller sends different packets of a given message to different frame relay networks.

21. The method of claim 19, further comprising the step of sensing failure of one of the parallel frame relay networks and automatically sending traffic through at least one other parallel frame relay network.